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EXAMINER

DAHBOUR, FADI H

ART UNIT

PAPER NUMBER

3743

DATE MAILED: 11/18/2003

16

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/889,843

Applicant(s)

SURJAN ET AL.

Examiner

Fadi H. Dahbour

Art Unit

3743

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 October 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 23 is/are allowed.
- 6) ☒ Claim(s) 1-20 and 22, 24 is/are rejected.
- 7) ☒ Claim(s) 21 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 July 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. The Examiner acknowledges Applicant's submission of the amendment filed on 10/27/03. Claims 1-24 are now pending.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-2, 4-10, 12-20, 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watts in view of Schmitt.

Watts discloses a self regulating flexible heater construction for producing heat when connected to an electrical power source (Figs.1-3), comprising a flexible substrate (14 of Fig.2, also see "substrate" in line 44 of col.2) conformable to the shape of a contiguous flexible surface to be heated (Fig.3), a layer of a positive temperature coefficient material (see "layer of positive temperature coefficient...material" in lines 5-7 of col.3), and a layer of conductive material applied to the heater in an interdigitated pattern (Fig.1, also see "interdigitated" in line 1 of col.3), wherein the layer of positive temperature coefficient material is applied to the layer of conductive material in an interdigitated pattern (see "screen printed over the buss system is a layer of positive temperature coefficient" in lines 5-6 of col.3), wherein the PTC material is comprised of a polyolefin resin (see lines 13-28 of col.3), wherein the conductive material is formulated from a mixture of a polymeric resin selected from the group consisting of

vinyls, polyesters, acrylics and a conductive material selected from the group consisting of silver pigment, a silver coated copper pigment, or plated copper pigments (see lines 50-52 of col.2), wherein the conductive material is constructed of conductive wires (Fig.1) fixed within the construction by conductive glues (Fig.2, also see "adhesive" in line 47 of col.4), wherein at least the layer of conductive material is applied to the substrate by screen printing, spraying, draw down, web printing or any other printing method capable of providing a uniform coating (see "printable" in line 48 of col.2, also see "screen printed" in line 5 of col.3), a plurality of buss bars in electrical contact with the conductive material (Fig.1) and an electrical power source (see "power supply" in line 60 of col.2), wherein the buss bars have a width dimension and a length dimension and wherein the width decreases over at least a portion of its length (Fig.1), wherein the buss bars have a width dimension and a length dimension and wherein the width remains constant over at least a portion of its length (Fig.1), wherein the buss bars have a width dimension and a length dimension, and at least one void at a preselected location along its length (Fig.1), wherein the buss bars have a width dimension and a length dimension and wherein the width dimension increases step-wise over at least a portion of its length (Fig.1), wherein the spacing of the busses varies across the heater (Fig.1).

Regarding claims 1-2, 4-10, 12-20, Watts lacks the substrate being woven or non-woven fabric of 1 to 6 ounces per square yard. Schmitt discloses a substrate being woven or non-woven fabric of 1 to 6 ounces per square yard (7 of Fig.3, also see "non-woven fabric... 150 g/m²" in line 8 of col.4). It would have been obvious to one having

ordinary skill in the art at the time the invention was made to have the features taught by Schmitt, in the device of Watts, because Schmitt teaches that it serves to provide support (see "support...fabric" in lines 7-8 of column 4 of Schmitt), or, because Schmitt teaches that it could serve to provide an aesthetic quality (see "decorative fabric...decoration pattern like the support layer 7" in lines 43-47 of col.4 of Schmitt).

Furthermore, regarding claim 7, Watts lacks the PTC material having a weight of 7 to 20 lbs per ream. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the PTC material having a weight of 7 to 20 lbs per ream, in the device of Watts, because Watts teaches the "PTC...having a composition adjusted to have a desired electrical characteristic for the particular application" (see lines 8-10 of col.3 of Watts).

Furthermore, regarding claims 8-9, Watts lacks the PTC material having a surface resistivity of 3 to 8 kilo-ohms as measured by multimeter probes set 1cm apart. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the PTC material having a surface resistivity of 3 to 8 kilo-ohms as measured by multimeter probes set 1cm apart, in the device of Watts, because Watts teaches the "PTC...having a composition adjusted to have a desired electrical characteristic for the particular application" (see lines 8-10 of col.3 of Watts).

Furthermore, regarding claim 20, Watts lacks an overlayer of a laminated or sewn secondary breathable woven or non-woven fabric comprised of natural or synthetic fibers which covers the heater. Schmitt discloses an overlayer of a laminated or sewn secondary breathable woven or non-woven fabric comprised of natural or synthetic fibers which covers

a heater (6 of Figure 3, also see "cover layer 6...nonwoven fabric" in lines 42-44 of col.4). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the features taught by Schmitt, in the device of Watts, because Schmitt teaches that it could serve to provide an aesthetic quality (see "decorative fabric...decoration pattern" in lines 43 & 46 of col.4 of Schmitt).

Furthermore, regarding claim 24, Watts lacks the substrate being fabric having a bulk density of about 0.6 g/cm^3 or greater and a thermal diffusivity of about $0.003 \text{ cm}^2/\text{s}$ or greater. Schmitt discloses a substrate being fabric having a bulk density of about 0.6 g/cm^3 or greater and a thermal diffusivity of about $0.003 \text{ cm}^2/\text{s}$ or greater (7 of Fig.3, also see "fabric" in line 8 of col.4, also see "non-woven...polyester" in lines 8-9 of col.4 of Schmitt, also see "non-woven polyester" in line 14 of page 12 of applicant's specification). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the features taught by Schmitt, in the device of Watts, because Schmitt teaches that it serves to provide support (see "support...fabric" in lines 7-8 of column 4 of Schmitt), or, because Schmitt teaches that it could serve to provide an aesthetic quality (see "decorative fabric...decoration pattern like the support layer 7" in lines 43-47 of col.4 of Schmitt).

4. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Watts in view of Schmitt and Gustavsson et al.

Watts and Schmitt, as described above, disclose all the claimed features except the heater being incorporated within an automobile seat. Gustavsson discloses a heater being incorporated within an automobile seat (see "for vehicle seats" in line 56 of col.1, also see "seat heaters" in line 11 of col.2). It would have been obvious to one having ordinary skill in

the art at the time the invention was made to have the feature taught by Gustavsson, in the device of Watts and Schmitt, because Gustavsson teaches that it is desirable for the seat heater to be a self-regulating heater (see "PTC properties" in line 6 of abstract, also see "PTC properties... self-regulated" in lines 24 & 31 of col.11 of Gustavsson), and also because, Watts teaches that "the heating device 12 according to the present invention can be used in any other application where a self-regulating heater is desirable" (see lines 26-29 of col.2 of Watts).

5. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Smuckler in view of Schmitt.

Smuckler discloses a self regulating flexible heater construction for producing heat when connected to an electrical power source (Figs.1-3), comprising a flexible substrate (Figs.1-2, also see "substrate" in line 2 of abstract) conformable to the shape of a contiguous flexible surface to be heated (Figs.1-2), a layer of positive temperature coefficient material (14 of Figs.1-2, also see "positive temperature coefficient" in lines 62-63 of col.3), a layer of a conductive material (15, 16 of Figs.1-2), wherein at least one of the layers is applied to the heater in an interdigitated pattern (Fig.2), wherein the layer of conductive material is applied to the layer of positive temperature coefficient material in an interdigitated pattern (Figures.1-2, also see "15 and 16 are then applied onto coating 14" in line 25 of col.4).

Smuckler lacks the substrate being fabric. Schmitt discloses a substrate being fabric (7 of Fig.3, also see "fabric" in line 8 of col.4). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the feature taught by

Schmitt, in the device of Smuckler, because Schmitt teaches that it serves to provide support (see "support...fabric" in lines 7-8 of column 4 of Schmitt), or, because Schmitt teaches that it could serve to provide an aesthetic quality (see "decorative fabric...decoration pattern like the support layer 7" in lines 43-47 of col.4 of Schmitt).

6. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Smuckler in view of Schmitt and Ohmura et al.

Smuckler and Schmitt, as described above, disclose all the claimed features except the conductive material being formulated from a mixture of solvating materials selected from the group consisting of organic solvents and water based solvents and a conductive material selected from the group consisting of silver pigment, a silver coated pigment, or plated copper pigments. Ohmura discloses a conductive material being formulated from a mixture of solvating materials selected from the group consisting of organic solvents and water based solvents and a conductive material selected from the group consisting of silver pigment, a silver coated pigment, or plated copper pigments (see "silver paste consisting of silver powder...and an organic solvent" in lines 44, 49-50 of col.2). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the feature taught by Ohmura, in the device of Smuckler and Schmitt, because Ohmura teaches that it is suitable material for electrodes in a PTC-type heating device (see "on both surfaces...of a PTC...to form... electrodes" in lines 40, 51-52 of col.2 of Ohmura).

Allowable Subject Matter

7. Claim 21 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. Claim 23 is allowed.

Response to Arguments

9. Applicant argues that there is no teaching to have the features of Schmitt in the device of Watts, however, Schmitt teaches that it serves to provide support (see "support...fabric" in lines 7-8 of column 4 of Schmitt), or, because Schmitt teaches that it could serve to provide an aesthetic quality (see "decorative fabric...decoration pattern like the support layer 7" in lines 43-47 of col.4 of Schmitt).

10. Applicant argues that Watts does not disclose being conformable to the shape of a contiguous flexible surface to be heated, however, Watts discloses such (see Figure 3).

11. Applicant argues that Schmitt does not disclose a fabric overlayer that covers the heater, however, Schmitt discloses such (see 6 of Figure 3, also see "cover layer 6...nonwoven fabric" in lines 42-44 of col.4).

12. Applicant argues that Schmitt does not disclose a fabric construction having a bulk density of about 0.6 g/cm³ or greater and a thermal diffusivity of about 0.003 cm²/s or greater, however, Schmitt discloses such (see 7 of Fig.3, also see "fabric" in line 8 of col.4, also see "non-woven...polyester" in lines 8-9 of col.4 of Schmitt, also see "non-woven polyester" in line 14 of page 12 of applicant's specification).

13. Applicant argues that there is no teaching to have the features of Gustavsson et al in the device of Watts and Schmitt, however, Gustavsson teaches that it is desirable for the seat heater to be a self-regulating heater (see "PTC properties" in line 6 of abstract, also see "PTC properties... self-regulated" in lines 24 & 31 of col.11 of Gustavsson), and also, Watts teaches that "the heating device 12 according to the present invention can be used in any other application where a self-regulating heater is desirable" (see lines 26-29 of col.2 of Watts).

Conclusion

14. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fadi H. Dahbour whose telephone number is 703-306-5479. The examiner can normally be reached on M-F, 9am-5:30pm est.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Henry A. Bennett, can be reached on (703) 308-0101. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications and 703-872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0861.



Henry Bennett
Supervisory Patent Examiner
Group 3700

Fadi H. Dahbour
Examiner
Art Unit 3743

November 14, 2003